

## ABSTRACT

There is provided a PLC module formed by depositing the core as an optical signal transmission medium and the clad surrounding the core on a semiconductor substrate, wherein a heating line is attached to the lower surface of the PLC and generates heat to the PLC from externally received power. An insulation layer is coated on the lower surface of the PLC with the heating line fixed thereto. Therefore, the direct attachment of the heating line to the lower surface of the PLC minimizes heat loss.